Dr. Huimin Lu

Background

- Since 12/2014: Associate Professor, College of Mechatronics and Automation, NUDT, China
- 10/2014-10/2015: Visiting Scholar, Department of Cognitive Systems, University of Tübingen, Germany
- 12/2010-12/2014: Lecturer, College of Mechatronics and Automation, NUDT, China
- 03/2006-12/2010: Ph.D student, College of Mechatronics and Automation, NUDT, China
- 09/2003-12/2005: Master student, College of Mechatronics and Automation, NUDT, China
- 09/1999-07/2003: Undergraduate student, College of Mechatronics and Automation, National University of Defense Technology (NUDT), China

Research Interests

- Robot Vision
- Omnidirectional vision
- Robot Soccer

Current Projects

- Biologically inspired visual navigation for mobile robots
- Long-term visual SLAM in large-scale and outdoor unstructured environments, supported by National Science Foundation of China
- Visual navigation for outdoor/field robots with omnidirectional vision and stereo vision

Publications

• Huimin Lu, Lixing Jiang, Andreas Zell. Long Range Traversable Region Detection Based on Superpixels Clustering for Mobile Robots. Accepted by the 2015 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2015), Hamburg, Germany, September 28~October 02, to appear.
• Lilian Zhang, Huimin Lu, Xiaoping Hu, Reinhard Koch. Vanishing Point Estimation and Line Classification in a Manhattan World with a Unifying Camera Model. International Journal of Computer Vision, 2015, available online.[link].
• Dan Xiong, Junhao Xiao, Huimin Lu, Qinghua Yu, Zhiwen Zeng, Kaihong Huang, Shuai Cheng, Xiaodong Yi, Zhiqiang Zheng. The Design of an Intelligent Soccer-Playing Robot. Accepted by Industrial Robot: An International Journal, 2015, to appear.
• Xiaozhou Zhu, Xin Song, Xiaoqian Chen, Huimin Lu. Flying Spacecraft Detection with the Earth as the Background Based on Superpixels Clustering. Proceedings of the 2015 IEEE International Conference on Information and Automation (ICIA 2015), Lijiang, Yunan, China, August 8-10, 2015.
• Huimin Lu, Qinghua Yu, Dan Xiong, Junhao Xiao, and Zhiqiang Zheng. Object Motion Estimation Based on Hybrid Vision for Soccer Robots in 3D Space. RoboCup 2014: Robot World Cup XVIII, Lecture Notes in Computer Science Volume 8992, pp 454-465, 2015.
• Huimin Lu, Xun Li, Hui Zhang, and Zhiqiang Zheng. Robust Place Recognition Based on Omnidirectional Vision and Real-time Local Visual Features for Mobile Robots. Advanced Robotics, Vol.27, No.18, pp.1439-1453, 2013.
• Huimin Lu, Xun Li, Hui Zhang, Mei Hu and Zhiqiang Zheng. Robust and Real-time Self-Localization Based on Omnidirectional Vision for Soccer Robots. Advanced Robotics, Vol.27, No.10, pp.799-811, 2013.
• Huimin Lu, Shaowu Yang, Hui Zhang, Zhiqiang Zheng. A Robust Omnidirectional Vision Sensor for Soccer Robots. Mechatronics, Elsevier, Vol.21, No.2, pp. 373-389, 2011.

• Huimin Lu, Zhiqiang Zheng. Two Novel Real-Time Local Visual Features for Omnidirectional Vision. Pattern Recognition, Elsevier, Vol.43, No.12, pp. 3938-3949, 2010.
• Huimin Lu, Hui Zhang, Shaowu Yang, Zhiqiang Zheng. Camera Parameters Auto-Adjusting Technique for Robust Robot Vision. Proceedings of the 2010 IEEE International Conference on Robotics and Automation (ICRA 2010), Anchorage, Alaska, USA, May 5~8, 2010, pp. 1518-1523.
• Huimin Lu, Hui Zhang, Junhao Xiao, Fei Liu, Zhiqiang Zheng. Arbitrary Ball Recognition Based on Omni-directional Vision for Soccer Robots. RoboCup 2008: Robot Soccer World Cup XII, LNAI 5399, Springer, pp. 133-144, 2009. (This paper was also oral presented in RoboCup 2008 International Symposium.)
• ZHU Xiaozhou, LU Huimin, YANG Xingrui, LI Yubo, ZHANG Hui. Stereo Vision Based Traversable Region Detection for Mobile Robots Using U-V-Disparity. Proceedings of the 32nd Chinese Control Conference, Xi'an, China, July 26-28, 2013, pp. 5785-5790.

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